

# **\*\*ATTENTION\*\***

*This document is provided for historical purposes only.*

*Documents contained in the Washington Department of Fish and Wildlife Document & Publication Archive may contain dated and/or incorrect information. The WDFW Document & Publication Archive is provided as a service to those interested in the history of fish and wildlife management in Washington State.*

1/91

## **Mountain Caribou**

*Rangifer tarandus caribou*

### **Range:**

Occupies the international border area of northern Idaho, Washington and southern British Columbia (USFWS 1985).

### **Washington Distribution:**

Small numbers inhabit the Selkirk Mountains of northeastern Washington (Pend Oreille County).

### **Habitat Requirements:**

Woodland caribou are found on moderate slopes above 1300m (4300') (Layser 1974, Freddy 1974). Caribou use streams, bogs, basins, and other areas that are no more than 35% slope and are composed of mature or old-growth timber are used by caribou (Freddy 1974, Simpson and Woods 1987). Simpson and Woods (1987) observed that caribou avoided immature forests (20-100 yrs.), but they will use low elevation mature forests where they still exist in British Columbia. Calving areas are on high elevation rocky ridge tops with 20 - 40% canopy cover (Compton, pers. comm.).

The caribou move through elevation zones seasonally to feed on lichens, new herbaceous vegetation, mushrooms, shrub leaves, grasses, sedges, and soft shrubs (USFWS 1985). Arboreal lichens of the genera *Alectoria* and *Bryoria* are consumed almost exclusively in winter and are eaten from October into May (Freddy 1974, Simpson and Woods 1987). Old-growth and spruce-fir stands apparently provide the most productive and available lichens for caribou. Lichens are consumed from 1.5 to 6.1m (5'- 20') above the ground on shaded trees (USFWS 1985); wind thrown lichens from tree tops are important in early winter (Stevenson 1979, Simpson et al. 1987, Rominger and Oldemeyer 1989).

Woodland caribou exhibit traditional, seasonal, and elevational migration between habitats (Freddy 1974, USFWS 1986, Simpson et al. 1987) and annual fidelity to small areas of habitat (Rominger and Oldemeyer 1989). Summer and early winter are critical times in which habitat quality and availability may be limiting to caribou population (Simpson et al. 1988). Servheen and Lyon (1989) found certain habitat characteristics to be constant for most seasonal habitats in the Selkirk Mountains: 1) a high abundance of lichens, 2) 30% of stands had tree crown canopy >50%, and 3) stem diameters were > 20 cm (8"), except at high elevations. The following habitat descriptions from the Colville National Forest Plan (1988) are based Scott and Servheen (1985):

Early Winter (November 1 - December 31) - Habitat consists of dense, closed canopy, mature cedar-hemlock adjacent to more open stands including the subalpine fir ecotone. Moderate slopes (< 40%) with north and east aspects are

preferred.

Late Winter (January 1 - April 30) and Calving (June 1 - July 15) - Caribou use high elevation old-growth and mature Englemann spruce - subalpine fir stands with low basal area and moderate canopies during the late winter and summer calving season. The ridge tops and upper slopes (< 30%) on all aspects and areas with high-density windthrow of lichen-bearing trees are preferred (Rominger and Oldemeyer 1989).

Spring (May 1 - July 15) - The lower slopes (< 35%) with south and west aspects and valley bottoms are preferred during spring. In this low elevation cedar-hemlock zone, the caribou use a mixture of mature, dense-canopied stands and immature, open-canopied stands adjacent to openings and clearcuts with new green forage.

Summer (July 15 - August 30) - During this season caribou seek lush forage at high elevations on shallow slopes (20% +) with all aspects in mature spruce - subalpine fir stands.

Fall (September 1 - November 1) - The fall rutting season marks a shift to lower elevation to dense-canopied, spruce-fir stands with abundant snags and lichens. Lower slopes (< 20%) with all aspects, benches, valley bottoms, seeps, basins and riparian areas are preferred.

#### Limiting Factors:

Habitat loss, natural and human predation, habitat fragmentation, and the availability of early winter habitat and lichen forage limit this small population (USFWS 1985, Compton, pers. comm.)

#### Management Recommendations:

Natural predation, poaching, accidental shooting, and highway accidents may seriously impact the remaining population of woodland caribou. Efforts to reduce this source of mortality should include hunter education, posting signs, and enforcement programs. Curtailing vehicular access into caribou habitat during hunting seasons may reduce poaching, accidental shooting, and road kills (Freddy 1984, Scott 1985).

Intensive use of snowmobiles in caribou wintering areas may cause the animals to abandon the site. Cross country skiers may also cause caribou to avoid an area (Simpson 1987). Prohibiting or limiting snowmobile and skier access in areas used by caribou could reduce poaching as well as disturbance to caribou (Freddy 1974, Scott 1985, Simpson 1987).

The main challenge for land managers is to maintain a balance among all seasonal habitats, with emphasis on the critical spring and early-winter habitats. Large blocks of the seasonal habitats should be connected by migration corridors

(Servheen and Lyon 1989).

The Colville National Forest Land and Resource Management Plan (1988) includes the following management prescriptions to recover the Selkirk Mountain caribou in the five seasonal use areas:

Early Winter Habitat - Maintain 60% of cedar-hemlock zone in old-growth cover types with a spruce-fir component at the ecotone. The major goal is an uneven-age stand structure that minimizes early winter snow depths, > 70% crown closure with trees > 10 m (30') tall and > 53 cm (21") dbh.

Late Winter Habitat - Timber management is not anticipated for most of these sites which are outside of commercial production areas. The target is for mature to over-mature spruce-fir stands with 30 - 50% canopy closure and trees > 6 m (20') tall and > 20 cm (8" dbh).

Spring Habitat - Manage 40% of the cedar-hemlock zone as caribou spring range with priority given to south and west aspects. Use even-age management to create early successional stages with < 45% canopy closure.

Summer Habitat - A minimum of 25% of sites capable of providing summer habitat in each Caribou Management Area will be maintained. The target stand condition is mature spruce-fir with 40 - 70% crown closure and trees > 35 cm (14") dbh.

Fall Habitat - Maintain spruce-fir stands using uneven-age management with 40 - 100% crown closure and trees > 10m (30') tall and 53 cm (21") dbh.

Where less than 60% of potential winter range has suitable mature forest, immature forests should be allowed to mature (Simpson et al. 1988).

Clearcut logging of mature, low elevation forest and road construction have removed critical early winter range and security cover for caribou. Avoid clearcut logging within caribou range. Avalanche slopes should be logged on one side only. Slash should be cleared by spring to provide new forage, and replanting should occur within one year (Simpson et al. 1988).

Selective logging may stimulate arboreal lichen production. Areas with high windthrow vary annually. Caribou travel extensively during early winter to find lichen-bearing windthrow. Therefore, it is important to maintain travel corridors between patches of early winter habitat (Rominger and Oldemeyer 1989).

No harvest or road construction should occur within 400 m (1/4 mile) of lakes, bogs, or fens over 0.1 ha (1/4 acre) in size (USFWS 1985). Control fires in, or adjacent to, known and potential caribou habitat.

Prevent surface developments, such as mining, roads, and power lines, from

eliminating the mature spruce-fir forest in known and potential caribou winter habitat (Freddy 1974).

#### References:

Compton, B. Wildlife Biologist, Idaho Fish and game Dept., Bonners Ferry, ID.

Freddy, D.J. 1974. Status and management of the Selkirk caribou herd, 1973. Unpublished M.S. Thesis, University of Idaho, Moscow, ID.

Layser, E.F. 1974. A review of woodland caribou of northeastern Washington and adjacent northern Idaho. J. of the Idaho Acad. of Sci. Special Research Issue No. 3.

Rominger, E.M. and J.L. Oldemeyer. 1989. Early-winter habitat of woodland caribou, Selkirk Mountains, British Columbia. J. Wildl. Manage. 53(1):238-242.

Scott, M. 1985. The woodland caribou. in R.L. Di Silvestry, ed. Audubon Wildlife Report 1985. National Audubon Soc., New York.

Scott, M. and G. Servheen. 1985. Caribou Ecology. Job Completion Report, P-R Project, Dept. of Fish and Game, Idaho.

Servheen, G. and L.J. Lyon. 1989. Habitat use by Woodland Caribou in the Selkirk Mountains. J. Wildl. Manage. 53(1):230-237.

Simpson, K. 1987. The effects of snowmobiling on winter range use by mountain caribou. Ministry of Environment and Parks, Wildlife Working Report WR-25, Nelson, B.C.

Simpson, K., K. Hebert, and G.P. Woods. 1987. Critical habitats of caribou in the mountains of southern British Columbia. Ministry of Environment and Parks, Wildlife Working Report WR-23, Nelson, B.C.

Simpson, K., J.P. Kelsall, and C. Clement. 1988. Caribou and moose habitat inventory and habitat management guidelines on the Columbia River drainage near Revelstoke, B.C., unpubl. rept. for Ministry of Environment, Wildlife Branch.

Simpson, K. and G.P. Woods. 1987. Movements and habitats of caribou in the mountains of southern British Columbia. Ministry of Environment & Parks Wildlife Bull. No. 8-57.

Stevenson, S.K. 1979. Effects of selective logging on arboreal lichens used by Selkirk caribou. Fish and Wildl. Rept. No. R-2. Ministry of Forest, Nelson, B.C.

United States Fish and Wildlife Service. 1985. Selkirk mountain caribou management plan. USDI Fish and Wildlife Service, Portland OR.

Key Points:

Habitat Requirements:

- Selkirk Mountains, mature to old growth forest.
- Spring - cedar-hemlock & lower elevation zones..
- Early winter - cedar-hemlock zone & ecotone with subalpine fir.
- Late Winter and Summer - alpine and spruce-fir zones.
- Diet - winter: arboreal lichens, Other seasons: lichens, herbs, mushrooms, shrub leaves, grasses, & sedges.

Management Recommendations:

- Maintain large blocks of all seasonal habitats, emphasizing critical summer and early winter habitats.
- Maintain forest corridors between seasonal ranges.
- Avoid clearcuts.
- Use road closures to control access and hunting in wintering areas.
- Allow some lower elevation forest stands to mature.